

**CORRECTED VERSION**

**(19) World Intellectual Property  
Organization  
International Bureau**



**(43) International Publication Date**  
**15 July 2004 (15.07.2004)**

**PCT**

**(10) International Publication Number**  
**WO 2004/059934 A1**

**(51) International Patent Classification<sup>7</sup>: H04L 27/233,  
H04O 7/30**

(74) Agents: **BATTIPEDE, Francesco et al.**; **Pirelli S.p.A.**,  
Viale Sarca, 222, I-20126 Milano (IT).

**(21) International Application Number:**  
PCT/IB2002/005613

(81) **Designated States (national):** AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU. ZA, ZM, ZW.

**(22) International Filing Date:**  
24 December 2002 (24.12.2002)

(25) Filing Language: Italian

(26) Publication Language: English

(71) *Applicants (for all designated States except US):*  
**PIRELLI & C. S.p.A.** [IT/IT]; Via Gaetano Negri, 10,  
 I-20123 Milano (IT). **TELECOM ITALIA S.P.A.** [IT/IT];  
 Piazza degli Affari, 2, I-20121 Milano (IT).

**(84) Designated States (regional):** ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**(72) Inventors:** and

**Published:**

**(75) Inventors/Applicants (for US only):** **BUSCAGLIA, Flavio** [IT/IT]; Telecom Italia Lab S.p.A., Via G. Reiss Romoli, 274, I-10148 Torino (IT). **BERNASCONI, Valerio** [IT/IT]; Telecom Italia Lab S.p.A., Via Reiss Romoli, 274, I-10148 Torino (IT).

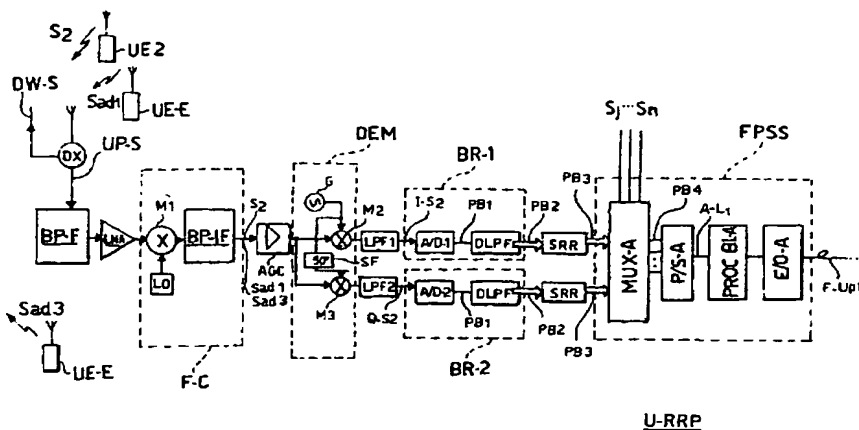
with international search report

**(48) Date of publication of this corrected version:**

**10 September 2004**

[Continued on next page]

**(54) Title: RADIO BASE STATION RECEIVER HAVING DIGITAL FILTERING AND REDUCED SAMPLING FREQUENCY**



**(57) Abstract:** Station (U-RRP) for processing a first signal which can be generated by a mobile terminal and belongs to a plurality of signals for mobile radio communications networks, said station including: an input able to receive from an antenna (A) the first signal associated with a first band and at least one adjacent signal of said plurality associated with a second band adjacent to that of the first signal; a processing stage (BP-IP, DEM, AD-1) for generating from the first digital signal at a first sampling frequency, this first digital signal including a useful spectral content of the first signal and an interfering spectral content associated with said adjacent signal; a digital filter (DLPF) for processing the first digital signal, attenuating the interfering spectral content, and for providing a filtered digital signal including at least part of said useful spectral content, sampled at a second sampling frequency less than the first sampling frequency and an electro-optical converter (E/O-A) for generating from said filtered digital signal electromagnetic radiation to be transmitted on a waveguide (F-up1).



(15) **Information about Correction:**  
see PCT Gazette No. 37/2004 of 10 September 2004, Section II

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*